3A NODE 1 MDM STATE - B. TRANSITIONING N1-2 TO PRIMARY FROM OFF/DIAGNOSTIC/STANDBY WHILE N1-1 IS PRIMARY

1. <u>VERIFY MDM STATES</u>

PCS1   Node 1: C&DH: MDM N1-1

     | PRIMARY NCS MDM Node 1 |

√STATE - Primary
√MDM ID - N1-1

If N1-2 is Off, go to step 2.
If N1-2 is in Diagnostic state, go to step 3.
If N1-2 is in Standby state, go to step 5.

2. <u>IF N1-2 IS INITIALLY OFF, BRING IT TO STANDBY</u>

PCS1   Node 1: C&DH: MDM N1-2

     | SECONDARY NCS MDM Node 1 |

'RPCM_N1RS2_C'

sel RPC 13 (Nod1_2_MDM)

| RPCM_N1RS2_C_RPC_13 Detail |

√Position - Op
 sel   Commands
 cmd Close **Execute**
√Position - Cl

Wait at least 90 seconds for MDM to start up, finish POST, and go to Standby State.

Go to step 4.

3. <u>IF N1-2 IS INITIALLY IN DIAGNOSTIC STATE, BRING IT TO STANDBY</u>

PCS1   Node 1: C&DH: MDM N1-2

     | SECONDARY NCS MDM Node 1 |

√Frame Count - static

PCS1   Node 1: C&DH: MDM N1-1

     | PRIMARY NCS MDM Node 1 |
     'Software Control'

sel Transmit Mode Code

| Primary_NCS_Transmit_Mode_Code |

   sel Primary NCS Xmt Mode Code Commands
   cmd Xmt_Stat_Word_Tmplt
   enter Bus ID - 2
   enter RT Address - 5 **Execute**

  √Subsystem Flag Set - X (set)

  If Subsystem Flag Bit is set, N1-2 MDM is in Diagnostic State and is
   ready to accept diagnostic commands.

PCS1   Node 1: C&DH: MDM N1-1
    | PRIMARY NCS MDM Node 1 |
   'Software Control'

  sel MDM Utilities
  sel Commands

> <u>NOTE</u>
> 1. Check with **MCC** for which command to send (reinit from DRAM or EEPROM).
>
> 2. For DRAM Reinitialization
>   Startup process will execute from the UAS currently loaded in DRAM.
>   No POST is performed.
>
> 3. For EEPROM Reinitialization
>   Reinitialize MDM from EEPROM will cause the loss of all current information in the DRAM such as BST, current Bus, RT, and application configuration.
>   All UAS and default Configuration Tables will be loaded from EEPROM.
>   Normal POST will be performed.

  If reinitialize from DRAM
   cmd N1_2_MDM_Re_Init_MDM_DRAM **Execute**

  If reinitialize from EEPROM
   cmd N1_2_MDM_Re_Init_MDM_EEPROM **Execute**

  Wait 60 seconds for MDM to reinitialize.

PCS1   Node 1: C&DH: MDM N1-2
    | SECONDARY NCS MDM Node 1 |

  √Frame Count - incrementing

  'MDM Major State:'

  √STATE - Standby
  √MDM ID - N1-2

```
********************************
*  If state is not Standby,    *
*                              *
*      √MCC                     *
********************************
```

4. <u>VERIFY N1-2 IS IN STANDBY STATE</u>
PCS1   Node 1: C&DH: MDM N1-2
       | SECONDARY NCS MDM Node 1 |

    √Frame Count - incrementing

    'MDM Major State:'

    √MDM State - Standby
    √MDM ID - N1-2

5. <u>COMMAND N1-1 TO SECONDARY (N1-2 SHOULD GO TO PRIMARY)</u>
PCS1   Node 1: C&DH: MDM N1-1
       | PRIMARY NCS MDM Node 1 |

NOTE
1. Sending the following command will cause the loss of PCS1, Early COMM, and OIU telemetry until OIU reconfiguration and PCS2 reconnection are done.
2. Possible PDI DECOM Fail message.

    'MDM Major State:'

    sel   Commands
    cmd N1-1_MDM_Xsitn_Second_State **Execute**
    √Frame Count - static (Loss of PCS1 telemetry)

    N1-2 should go to Primary in 20 seconds.

6. <u>TELEMETRY RECOVERY ON PCS2</u>
PCS2   After boot up when taskbar appears at bottom of display
           sel Arrow directly above 'PCS' logo
           sel Start/Restart PCS CDS
           sel Icon to open PCSCDS Main Control Panel Window

    √Status Box is green and 'Connected' is displayed in the PCS CDS
     Main Control Panel Window

NOTE
PCS connection to MDM is indicated by green in the Status Box and/or 'Connected' message displayed in the PCS CDS Main Control Panel Window.

```
* ******************************************************************* *
*   If Status Box is not green, select 'Connect to MDM' icon    *
*     to reconnect.                                             *
*   If still no joy, close all displays and all iconified items and *
*     repeat this step.                                        *
*                                                              *
* √MCC if Status Box is still not green.                       *
* ******************************************************************* *
```

7. <u>VERIFY N1-2 IS PRIMARY AND N1-1 IS SECONDARY</u>

PCS2   Node 1: C&DH: MDM N1-2

        | PRIMARY NCS MDM Node 1 |

√Frame Count - incrementing

'MDM Major State:'

√MDM ID - N1-2
√MDM State - Primary

PCS2   Node 1: C&DH: MDM N1-1

        | SECONDARY NCS MDM Node 1 |

√Frame Count - incrementing

'MDM Major State:'

√MDM ID - N1-1
√MDM State - Secondary

```
* *************************************************** *
*   If States are not correct or no N1-2 telemetry *
*                                                   *
*     √MCC                                          *
* *************************************************** *
```

8. <u>TELEMETRY RECOVERY ON EARLY COMM (GROUND ONLY)</u>

> NOTE
> Early COMM should reconnect to N1-2 MDM on the other Orb
> bus automatically in about 10 seconds after N1-2 MDM
> becomes Primary.

Node 1: C&DH: MDM N1-2

| PRIMARY NCS MDM Node 1 |

√Frame Count - incrementing

'MDM Major State:'

√MDM ID - N1-2
√MDM State - Primary

```
***************************************************************************
*  If Frame Count is Static after 20 seconds from the moment      *
*    N1-2 becomes Primary (no Early COMM telemetry received)  *
*                                                                 *
*      √MCC                                                       *
***************************************************************************
```

     9. <u>TELEMETRY RECOVERY ON OIU</u>

<u>NOTE</u>
Possible PDI DECOM Fail message.

CRT | SM 212 OIU |

BUS 3 BC - ITEM 11 EXEC
BUS 4 RT - ITEM 14 EXEC
Change OIU N1 Physical Device to N1-2 - ITEM 18 +<u>3</u> EXEC

CRT   Reload OIU FORMAT 2 - ITEM 1 +<u>2</u> EXEC

CRT | SM 210 NODE |

√PHY ID PRI MDM - N1-2
√STATE   - PRI
√FAIL   - blank
√FRM CTR   - incrementing